



### Description

- This habitat consists of subtidal substrates composed of rock, boulders, or cobbles, though there can be patches of sand veneer covering a hard bottom.
- There may be rich, diverse communities of attached and associated algae and animals; often there is little open space.
- Some of these habitats form a relief (reef or bank) several meters high that attracts a diversity of fish.

### Predicted Oil Behavior

- Mixed and hard-bottom habitats are usually considered to have low sensitivity to oil spills.
- Oil in the water column seldom reaches toxic levels and benthic organisms have little exposure.
- There is little risk of deposition of oil or oiled sediments in these habitats.
- There could be a short-term exposure as oiled sediments are transported through the habitat into deeper areas.
- Concerns about seafood contamination from dispersed oil or oiled sediments can become a significant issue. Real, potential, or fear of contamination can close seafood harvesting activities.

### Response Considerations

- Natural cleansing is expected to occur quickly, especially in the higher-energy environments.
- Avoid anchoring booms in known sensitive areas, such as unique live-bottom areas.
- Dispersants can be used directly over these habitats to protect sensitive intertidal areas. The deeper the water, the greater the dilution, and hence the lesser effect it will have on the mixed and hard-bottom habitats.
- In situ burning can be used directly over these habitats to protect sensitive intertidal environments. When burned, some oils can produce a sinkable residue; the potential effects of these residues will depend on the composition and amount of oil to be burned.

## SUBTIDAL

## Mixed and Hard Bottom

Response Method	Oil Category				
	I	II	III	IV	V
<b>Oil Category Descriptions</b>					
I – Gasoline products					
II – Diesel-like products and light crudes					
III – Medium grade crudes and intermediate products					
IV – Heavy crudes and residual products					
V – Non-floating oil products					
<b>The following categories</b> are used to compare the relative environmental impact of each response method in the specific environment and habitat for each oil type. The codes in each table mean:					
A = The least adverse habitat impact.					
B = Some adverse habitat impact.					
C = Significant adverse habitat impact.					
D = The most adverse habitat impact.					
I = Insufficient information - impact or effectiveness of the method could not be evaluated.					
— = Not applicable.					
Natural Recovery	A	A	A	B	B
Booming	—	B	B	B	—
Skimming	—	A	A	A	—
Physical Herding	—	A	A	A	—
Manual Oil Removal/Cleaning	—	—	B	B	B
Mechanical Oil Removal	—	—	—	—	—
Sorbents	—	A	A	A	B
Vacuum	—	—	B	B	B
Debris Removal	—	—	—	B	B
Vegetation Cutting/Removal	—	—	—	—	—
Low-pressure, Ambient Water Flushing	—	—	—	—	—
Dispersants	—	B	B	B	—
In-situ Burning	—	B	B	B	—

Consult the *Environmental Considerations for Marine Oil Spill Response* document referenced on page 5 before using this table.